



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,063	07/22/2003	Venkateshwar Rao Pullala	79771	8263

26327 7590 03/21/2007
THE LAW OFFICE OF KIRK D. WILLIAMS
PO BOX 61538
DENVER, CO 80206-8538

EXAMINER

DOAN, DUCT

ART UNIT PAPER NUMBER

2188

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/625,063

Applicant(s)

PULLELA ET AL.

Examiner

Duc T. Doan

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,4-8,10,12,14-17,20,22-25 and 28-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,4-7,10,12,14-17,20,22-25,28 and 29 is/are rejected.
- 7) ☒ Claim(s) 8 and 30-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

Claims 1-29 have been presented for examination in this application. In response to the last office action, claims 30-32 have been added, claims 1,3,9,11,13,18-19,21,26-27 have been canceled. Claims 2,4-8,10,12,14-17,20,24,28-29 were amended.

As the result, claims 2,4-8,10,12,14-17,20,22-25,28-32 are pending in this application.

Claims 2,4-7,10,12,14-17,20,22-25,28-29 are rejected.

Claims 8,30-32 are objected to.

Applicant's remarks filed 2/6/07 have been fully considered with results as follows,

The amendments of claims 12,14-17 have overcome the previous issues of the claims under U.S.C 101. further interprets the tangible media in the amended claims excluding the signal transmission media.

The amendments and remarks however are not persuasive. Therefore, the rejections from the previous office action are respectfully maintained, with changes as needed to address the amendments.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2,4-7,10,12,14-17,28-29 are rejected under 35 U.S.C. 102 (e) as being anticipated by Ikeda et al (US 6788683).

As in claim 2, Ikeda describes a method for processing packets, the method comprising: Identifying a flow identification value based on one or more field extracted from the packet (Ikeda's Fig 1: #21 VPI/VCI represents a field extracted from the packet and using as identifying a flow identification value, see Ikeda column 7 lines 50-55); performing a lookup operation in one or more memories or associative memories (Ikeda's Fig 1: #3 lookup retrieval table #24 in one or more memories or associative memories #24, #29 #5 #7) using a lookup value generated based on the flow identifying value, the lookup value including the flow identification value (Ikeda's Fig 1: #21 VPI/VCI represents a lookup value generated/extracted based on a field extracted from the packet; Ikeda's column 7 lines 35-55 further discloses various fields in the packet can be considered as flow identification value (i.e flow retrieval key value, including VPI/VCI) in order to identifying a flow identification value mask (Ikeda's Fig 1: #26 retrieval key; column 3 lines 20-32), masking the flow identification value with the flow identification value mask to generate a masked flow identification value (Ikeda's Fig 1: #26 retrieval key; column 3 lines 20-30; Ikeda's Fig 4: #4 column 8 lines 12-24 the retrieval key mask section masks fields of the packets to provide post-mask retrieved key value); and processing the packet

or another packet based on the masked flow identification value (Ikeda's Fig 1: #5, #7 discloses the post-mask retrieved key value, corresponding to the claim's masked flow identification, being used to further processing the packet).

As in claim 4, Ikeda describes wherein the flow identification value includes at least two items of the list consisting of source address, destination address, source port, destination port, and protocol type (Ikeda's Fig 2 shows the retrieve flag to mask corresponding fields in the packet header such as source address, destination address).

As in claim 5, Ikeda describes wherein the flow identification value includes a transport layer, session layer, presentation layer or application layer value (Ikeda's column 1, lines 47-55).

As in claim 6, Ikeda discloses wherein said one or more memory memories or associative memories tangibly store entries representing an access control list with said entries include processing indications of permit and deny operation (Ikeda's Fig 2: #flow action table includes flow action information indicating priorities such as forwarding, delay, reject operations, see Ikeda's column 10 lines 64-68; corresponding to the claim's permit and deny operations); and wherein said performing said lookup operation includes performing said lookup operation on said access control list entries (Ikeda's column 10 lines 47-58 discloses performing the lookup operation including looking up for priority information as entries in the forwarding/flow action table)

As in claim 7, Ikeda discloses wherein said performing the lookup operation based on the flow identification value includes: performing a first lookup operation on a first set of associative memory entries based on the flow identification value to generate an associative memory result; and performing a second lookup operation in an adjunct memory based on the associative

memory result to identify the flow identification value mask. Examiner notes that the claim describing a lookup function of a content addressable memory and retrieving data from its associating ram portion.

Examiner notes that the above claim's limitations describing functions of a content addressable memory that requires a matching function of a key value and a retrieving data function to retrieve data. Ikeda discloses the retrieval flag table storing a key such as logical link number to match with a field in the receiving packet; once the matching is found the retrieve flag value is retrieved, corresponding to the input link value (Ikeda's column 3 lines 5-11); Ikeda further discloses a CAM must be used to retrieve data based on a matching input (Ikeda's column 2 lines 30-40, CAM determines **matching content and not matching address**). Therefore, Ikeda clearly discloses the retrieval flag table performing the matching function and the retrieving function as claimed.

As in claim 10, Ikeda discloses an apparatus for processing packets, the apparatus comprising:

A packet processing engine configured to identify a packet and a flow identification value based on the packet (Ikeda's Fig 1: #8, #9 packet /cell transmission and processing engines); an associative memory configured to perform a second a first look up operation with a lookup value including the flow identification value to identifying a matching function (Ikeda's column 7 lines 35-looking up the retrieval flag table with a field including the flow identification values (i.e lookup key value is a field in several fields of a packet) to identifying a matching; an adjunct memory configured to perform a second lookup operation based on the matching to

identify a flow identification value mask (Ikeda's Fig 1: retrieve flag table employed looking up and matching a key value to identifying a flow identification value mask, (i.e Fig 1: #26 retrieval flag);

Examiner notes that the above claim's limitations describing functions of a content addressable memory that requires a matching function of a key value and a retrieving data function to retrieve data. Ikeda discloses the retrieval flag table storing a key such as logical link number to match with a field in the receiving packet; once the matching is found the retrieve flag value is retrieved, corresponding to the input link value (Ikeda's column 3 lines 5-11); Ikeda further discloses a CAM must be used to retrieve data based on a matching input (Ikeda's column 2 lines 30-40, CAM determines **matching content and not matching address**). Therefore, Ikeda clearly discloses the retrieval flag table performing the matching function and the retrieving function as claimed.

Ikeda further discloses masking logic configured to mask the flow identification value with the flow identification value mask to generate a masked flow identification value mask (Ikeda's Fig 1: #4);

Ikeda further disclose a value memory configured to update a value at a position corresponding to the masked flow identification value (Ikeda's column 10 lines 57-63 discloses the packet transmission and processing section changes the TOS values and storing in the memory associated with the created packet).

Claim 12 rejected based on the same rationale as in the rejection of claim 2.

As in claim 14, Ikeda discloses the flow identification value includes at least two items of the list consisting of source address, destination address, source port, destination port and

protocol (Ikeda's column 1 lines 47-55 discloses several items being used as flow identification values include source address, destination address etc..).

As in claim 15, Ikeda discloses the flow identification value includes a transport layer, session layer, presentation layer or application layer values (Ikeda's column 1 lines 47-55).

Claim 16 rejected based on the same rationale as in the rejection of claim 6.

Claim 17 rejected based on the same rationale as in the rejection of claim 7.

Claim 20 rejected based on the same rationale as in the rejection of claim 2.

Claim 22 rejected based on the same rationale as in the rejection of claim 4.

Claim 23 rejected based on the same rationale as in the rejection of claim 5.

Claim 24 rejected based on the same rationale as in the rejection of claim 6.

Claim 25 rejected based on the same rationale as in the rejection of claim 7.

As in claims 26-27, the claims recite means for processing the packet based on the masked flow identification value (claim 26); processing the packet based on said generated masked flow identification value (claim 27). Ikeda's Fig 1 discloses a flow processing device that processes the packet based on the masked flow identification value (based on concatenated value of fields/parts VPI/VCI, flow retrieval key etc..).

As in claims 28-29, the claims recite the packet processing engine is configured to process the packet based on the masked flow identification value (claim 28); wherein said step includes: processing the packet based on said generated masked flow identification value (claim 29). Ikeda's Fig 1: #5 shows the flow processing device process the packet based on the masked

flow identification value (Ikeda's Fig 1 processes the retrieval key that corresponds to the masked flow identification value).

Allowable Subject Matter

Claims 8,30-32 are objected to as being dependent upon a rejected base claim(s), but would be allowable if rewritten in independent form including all of the limitations of the base claim(s) and any intervening claims.

Response to Arguments

Applicant's arguments filed 2/6/07 in response to the last office action has been fully considered with the results as follows,

A) Regarding the remarks on page 10 for the rejection under U.S.C 101, the amendments of claims 12,14-17 have overcome the previous issues of the claim rejections under U.S.C 101. Examiner further interprets the tangible media in the amended claims excluding the signal transmission media.

B) Regarding the Applicant's arguments on pages 11-13, Examiner maintains that Ikeda teaches the flow identification comprises several fields in the received packet (Ikeda's column 1 lines 45-55, flow identification comprises source port, source addresses etc.. fields), these fields are used as lookup values to the retrieval flag table to identifier a flow identifier mask (Ikeda's column 1 lines 55-60, Fig 1: #3, using these fields of the flow identification values, for example source address, source port, VPI/VCI as lookup values to retrieve a retrieval flag (i.e masked

flow identification value)). Therefore Ikeda teaches the lookup value is the same fields as the flow identification value. In other words, Ikeda teaches the claim's limitation "... the lookup value including the flow identification value.". Ikeda further teaches the claim's limitation of masking the flow identification value with the flow identification value mask to generate a masked flow identification value (see Ikeda's Fig 1: #4, column 8 lines 12-15).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 36 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

When responding to the office action, Applicant is advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

Art Unit: 2188

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc T. Doan whose telephone number is 571-272-4171. The examiner can normally be reached on M-F 8:00 AM 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung S. Sough can be reached on 571-272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


HYUNG SOUGH
SUPERVISOR/ART EXAMINER
3-19-07